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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,845	03/25/2004	Osamu Kakutani	85A 3518	6735

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EXAMINER

KOCH, GEORGE R

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/808,845

Applicant(s)

KAKUTANI, OSAMU

Examiner

George R. Koch III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/25/2004</u> . | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 5 objected to because of the following informalities: The punctuation appears to be incorrect (there are two periods at the end of the claim). Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claim 1 recites the limitation "a linear guide" in line 8. There is insufficient antecedent basis for this limitation in the claim. Is this the same linear guide as recited in line 5? For the purposes of examination, it have examined as if this is a different, or second, linear guide.
5. Claim 1 recites the limitation "a supporting stand" in line 8. There is insufficient antecedent basis for this limitation in the claim. Is this the same supporting stand as recited in line 5? For the purposes of examination, it have examined as if this is a different, or second, supporting stand.

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6. Claim 1 recites the limitation "a drive section" in lines 8-9. There is insufficient antecedent basis for this limitation in the claim. Is this the same drive section as recited in line 5? For the purposes of examination, it have examined as if this is a different, or second, drive section.

7. Claim 2 recites the limitation "the drive section", "the supporting stand" and "the linear guide" in multiple locations. There is insufficient antecedent basis for this limitation in the claim. It is unclear which drive sections and linear guides are being referenced. The drive sections, supporting stands and linear guides (in lines 2-4) associated with the first actuator are examined as being first drive sections, first supporting stands, and first linear guides, and the drive sections, supporting stands and linear guides (in lines 5-7) associated with the second actuator are examined as being as second drive sections, second supporting stands and second linear guides.

8. Claim 3 recites the limitation "the drive section", "the supporting stand" and "a magnet" in multiple locations. There is insufficient antecedent basis for this limitation in the claim. It is unclear which drive sections, supporting stands and magnets are being referenced. The drive sections, supporting stands and magnets (in lines 2-8) associated with the first actuator are examined as being first drive sections, first supporting stands and first magnets, and the drive sections, supporting stands and magnets (in lines 9-15) associated with the second actuator are examined as being as second drive sections, second supporting stands and second magnets.

9. Claim 3 recites the limitation "magnetic flux linkage" in lines 4, 7, 11, 14. There is insufficient antecedent basis for this limitation in the claim. It is unclear which magnetic

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flux linkage is being referenced at any given moment. The magnetic flux linkage associated with the first actuator is interpreted as the first magnetic flux linkage, and the magnetic flux linkage associated with the second actuator is interpreted as the second magnetic flux linkage.

10. Claim 4 recites the limitation "a slide stand", "a linear guide", "a drive section", "a supporting stand", "a magnet" and "a magnetic flux linkage" in multiple locations. There are insufficient antecedent basis for these limitations in the claim. It is unclear which slide stands, linear guides, drive sections, supporting stands, magnets and magnet flux linkages are being referenced. The slide stands, linear guides, drive sections, supporting stands, magnets and magnetic flux linkages (in lines 5-11) associated with the first actuator are examined as being the first slide stands, the first linear guide, the first drive sections, first supporting stands, the first magnet and first magnetic flux linkages, and the slide stands, linear guides, drive sections, supporting stands, magnets and magnetic flux linkages (in lines 13-19) associated with the second actuator are examined as being as second slide stands, the second linear guide, second drive sections, second supporting stands the second magnet and second magnetic flux linkages.

11. Claim 6 recites the limitation "the supporting stand" in line 2. There is insufficient antecedent basis for this limitation in the claim. Is this the supporting stand associated with the first, second or both actuators?

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12. Claim 7 recites the limitation "the supporting stand" in line 2. There is insufficient antecedent basis for this limitation in the claim. Is this the supporting stand associated with the first, second or both actuators?

13. Claim 8 recites the limitation "the supporting stand" in line 1. There is insufficient antecedent basis for this limitation in the claim. Is this the supporting stand associated with the first, second or both actuators?

***Claim Rejections - 35 USC § 102***

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(f) he did not himself invent the subject matter sought to be patented.

15. Claims 1-9 are rejected under 35 U.S.C. 102(f) because the applicant did not invent the claimed subject matter. See JP 2004-319958, which is the publication of application 2003-382890, which is the foreign priority document. This document indicates that Sumiya Osamu (or Osamu Sumiya) is the inventor. The declaration in the instant application indicates that Osamu Kakutani is the inventor. These are different inventors.

***Claim Rejections - 35 USC § 103***

16. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orcutt (US Patent 5,556,022) in view of Nihei (US Patent 6,059,169).

Orcutt discloses a bonding apparatus comprising a bonding head (item 17, ultrasonic wire bonder, see column 3, for example), which performs bonding work on an object of bonding, and a moving mechanism (items 14 and 15), which moves the bonding head to arbitrary positions, said moving mechanism comprising: a first actuator (item 14) comprised of a first movable member (moving coil 14a), which is movable along a linear guide (magnet 14b) rotationally provided (via pivot 13) on a supporting stand, and a drive section, which drives said first movable member, and a second actuator (item 15) comprised of a second movable member (moving coil 15a), which is movable along a linear guide (magnet 15b). Orcutt also discloses that the one end of the first movable member is fastened to the bonding head (i.e., element 33, which is connect to the movable member 14a).

However, Orcutt does not disclose that the second movable member is rotationally provided on a supporting stand, and a drive section, which drives said second movable member or that one end of the second movable member is shaft-supported by the bonding head.

However, Nihei discloses (see Figure 2) the use of multiple identical moveable members (AM12 and AM13) with multiple drive members (M2 and M3, and see column 2, lines 1-22) connected to bonding tools. The second movable member and drive member provides additional positioning flexibility to the bonding tool. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have added additionally drive members and movable members in the style of the first

actuator of Orcutt in order to achieve greater control over the positioning of the bonding tool.

As to claim 2, Orcutt discloses that the first actuator is structured so that the drive section and the linear guide that guides the first movable member are rotationally provided on the supporting stand as an integral unit (see Figures 2 and 3), and the second actuator as modified would also be structured so that the drive section and the linear guide that guides the second movable member are rotationally provided on the supporting stand as an integral unit.

As to claim 3, Orcutt discloses that the first actuator is comprised of a first movable coil (item 14a) which is said first movable member, and said drive section of the first actuator is fastened to the supporting stand and includes a magnet (item 14b) that provides a magnetic flux linkage to the first movable coil. The size of the first movable coil affects the magnetic flux linkage, and therefore is inherently set based upon conditions in which an amount of magnetic flux linkage, which is applied to the first movable coil by rotational and linear movements of the first movable coil, is free of changing. Similarly, the second actuator as modified by Nihei would be structurally identical to the first actuator.

Claim 4 is rejected on similar grounds as claim 3 above.

As to claim 5, Orcutt as applied in Claims 1 through 4 and modified by Nihei results in a bonding apparatus wherein a point where a first straight line and a second straight line intersect is set on substantially the center of gravity of the bonding head, said first straight line connecting a center of rotation of the first movable member and a



part of the first movable member at which the first movable member is connected to the bonding head, and said second straight line connecting a center of rotation of the second movable member and a part of the second movable member at which the second movable member is connected to the bonding head.

As to claims 6-8, official notice is taken that the various fluid pressure supporting or suspension mechanisms are well known and conventional for supporting the bonding structure. One in the art would immediately appreciate that the fluid pressure structures or suspensions would reduce oscillation and improve the mechanical feedback of the motion of the movement mechanism. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize such elements in order to reduce oscillation and improve movement feedback.

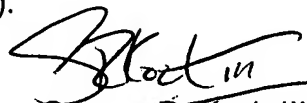
As to claim 9, Orcutt discloses two sensors (see Figure 1, S1 and S2), one for detecting the position of each movable member. Additionally, Nihei as incorporated discloses that it is known to utilize position calculating means and control means as claimed when utilize two movable members when connected as claimed (see Figure 4).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (571) 272-1230 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the applicant can communicate by calling the Federal Relay Service at 1-866-377-8642 and giving the operator the above TDD number. The examiner can normally be reached on M-Th 10-7.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



George R. Koch III  
Patent Examiner  
Art Unit 1734

GRK  
5/10/2005